STIGA PARK

DIESEL

DIESEL 4WD

STIGA

8211-0555-01

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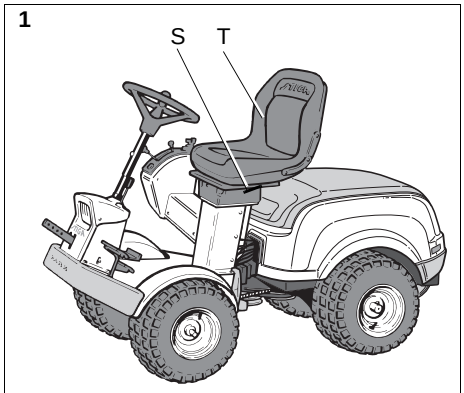

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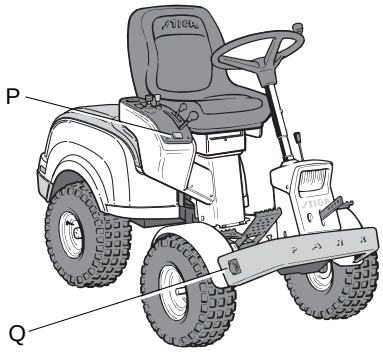

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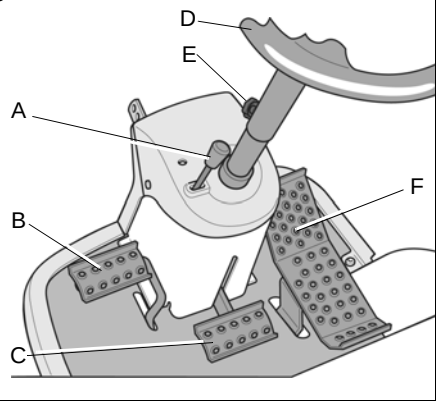

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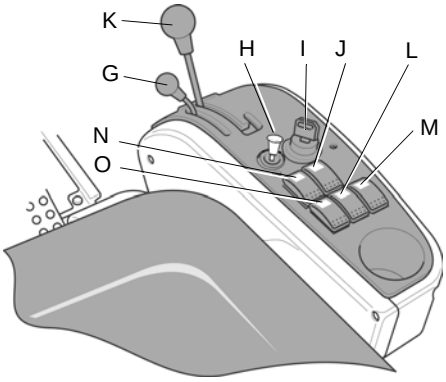

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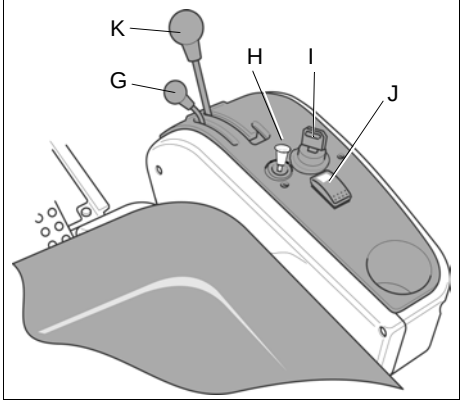

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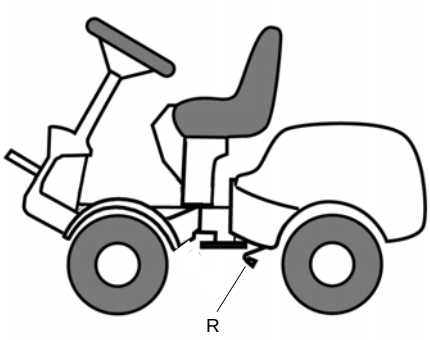

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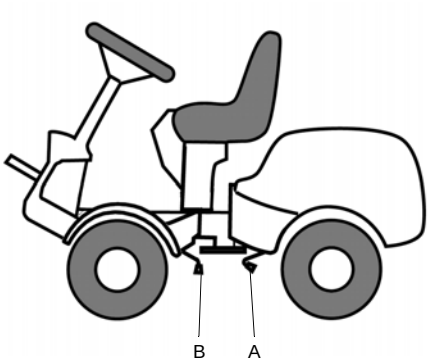

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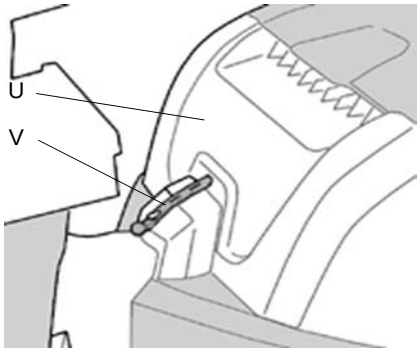

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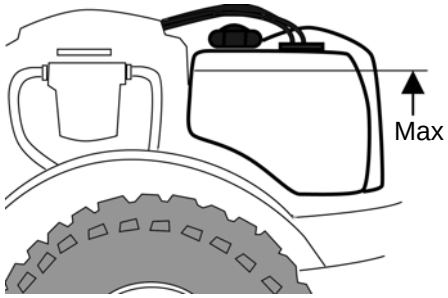

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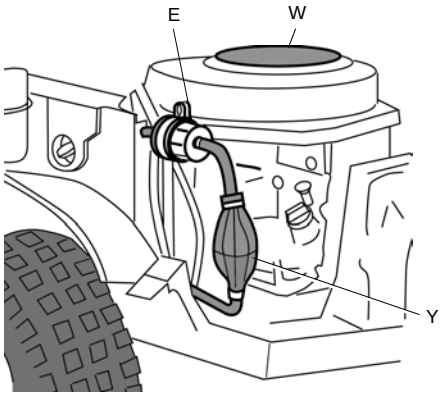

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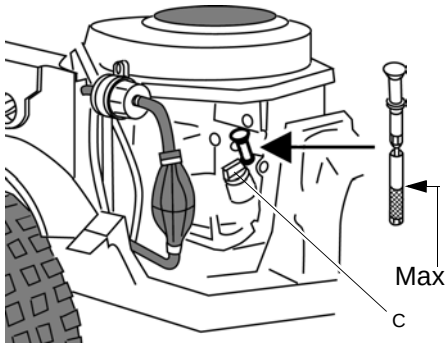

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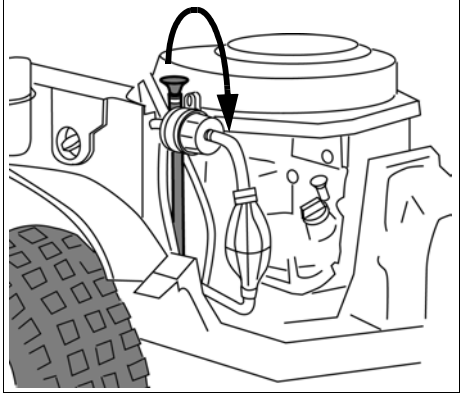

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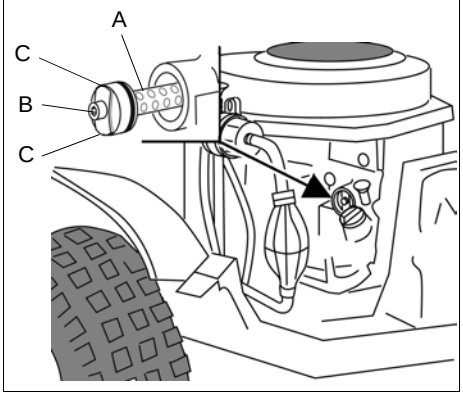

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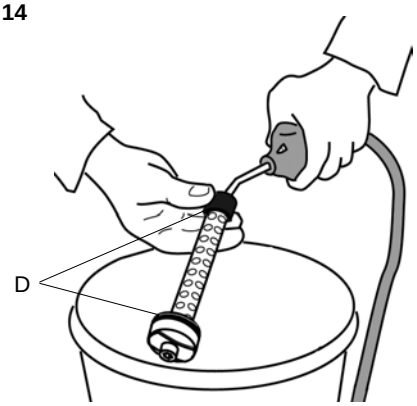

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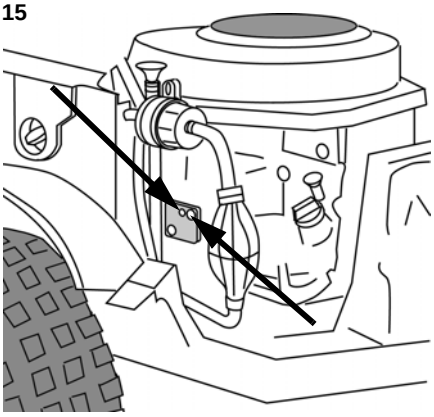

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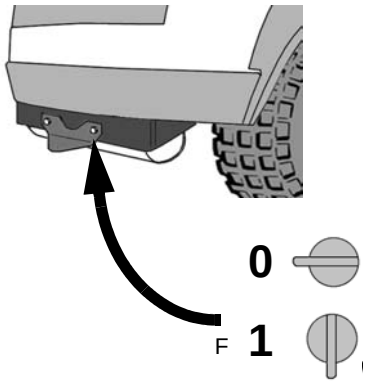

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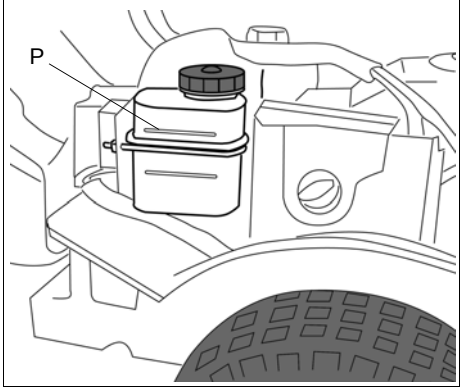

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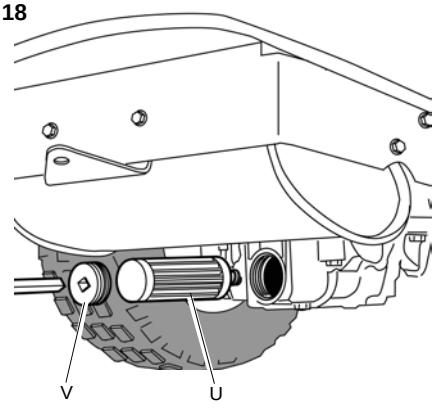

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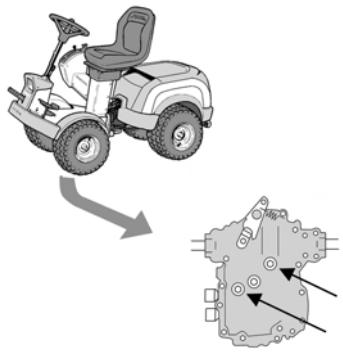

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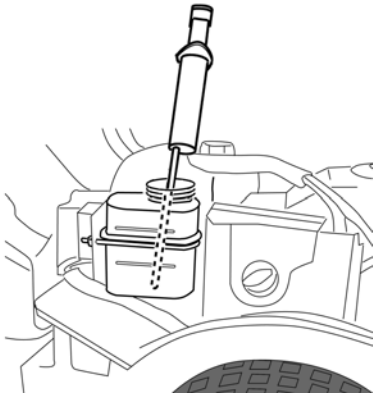

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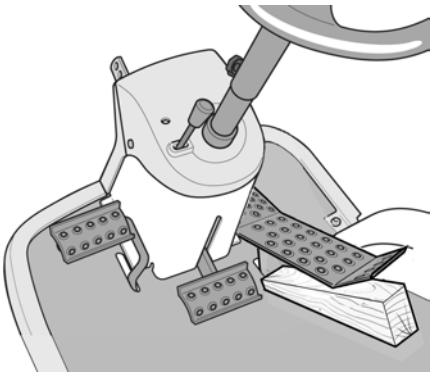

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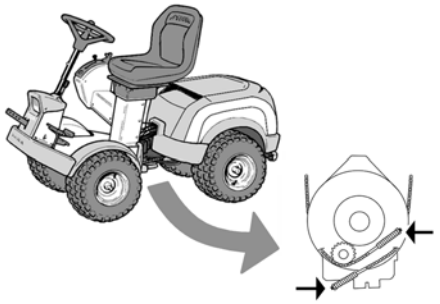

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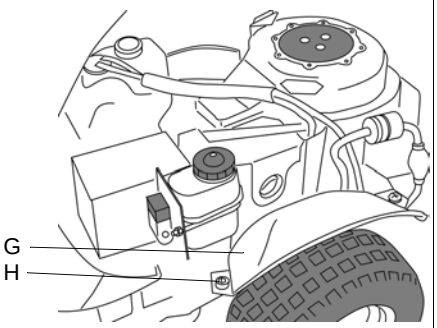

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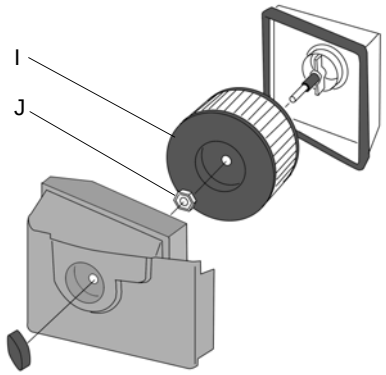

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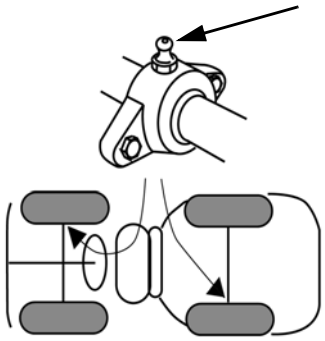

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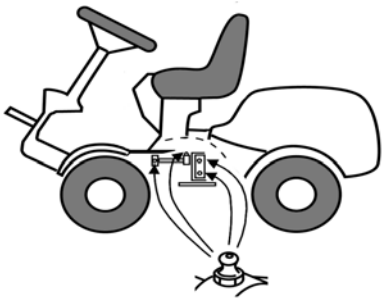

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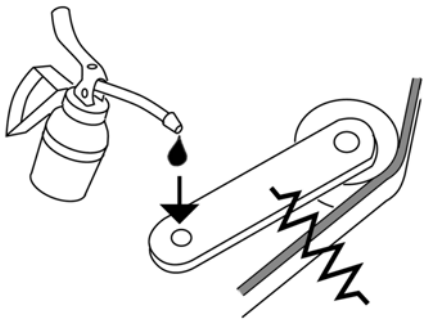

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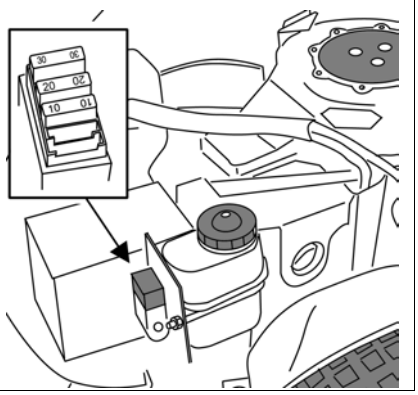

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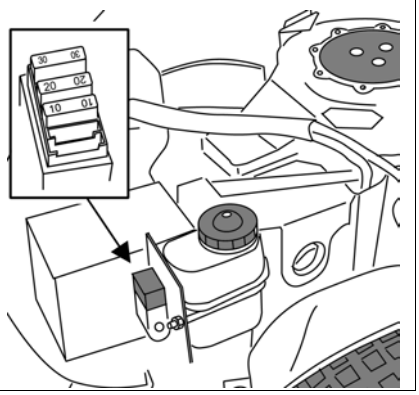


1 GENERAL

This symbol indicates WARNING. Serious personal injury and/or damage to property may result if the instructions are not followed carefully.

You must read these instructions for use and the accompanying pamphlet "SAFETY INSTRUCTIONS" carefully, before starting up the machine.

1.1 SYMBOLS

The following symbols appear on the machine. They are there to remind you of the care and attention required during use and maintenance.

This is what the symbols mean:

Warning!
Read the instruction manual and the safety manual before using the machine.

Warning!
Watch out for discarded objects. Keep onlookers away.

Warning!
Always wear hearing protectors.

Warning!
This machine is not designed to be driven on public roads.

Warning!
The machine, equipped with original accessories, must not be driven in any direction on slopes with a gradient greater than 10º.

Warning!
Risk of crushing injuries. Keep hands and feet well away from the articulated steering joint.

Warning!
Risk of burn injuries. Do not touch the silencer/catalytic converter.

1.2 References

1.2.1 Figures

The figures in these instructions for use are numbered 1, 2, 3, etc.
Components shown in the figures are marked A, B, C, etc.
A reference to component C in figure 2 is written "2:C".

1.2.2 Headings

The headings in these instructions for use are numbered in accordance with the following example:
"1.3.1 General safety check" is a subheading to "1.3 Safety checks" and is included under this heading.
When referring to headings, only the number of the heading is normally specified. E.g. "See 1.3.1".

2 DESCRIPTION

2.1 Drive

2.1.1 2WD

The machine is rear wheel drive.
The rear axle is equipped with a hydrostatic transmission with infinitely variable forward and reverse gear ratios.
The rear axle is also equipped with a differential to facilitate turning.
Front mounted tools are driven by drive belts.

2.1.2 4WD

The machine has 4-wheel drive. The power from the engine to the drive wheels is transferred hydraulically. The engine drives an oil pump, which pumps oil through the rear and front axle drives.
The front axle and rear axle are connected in series, which means that the front wheels and rear wheels are forced to rotate at the same speed.
To make turning easier, both axles are equipped with differential.
Front-mounted implements are powered via drive belts.

2.2 Steering

The machine is articulated. This means that the chassis is divided into a front and a rear section, which can be turned in relation to each other.
The articulated steering means that the machine can turn around trees and other obstacles with an extremely small turning radius.

2.3 Safety system

The machine is equipped with an electrical safety system. The safety system interrupts certain activities that can entail a danger of incorrect manoeuvres. For example, the engine cannot be started if the clutch-parking brake pedal is depressed.

The operation of the safety system must always be checked every time before use.

2.4 Controls

2.4.1 Implement lifter, mechanical (3:C) (2WD)

To switch between working position and transport position:
1. Depress the pedal fully.
2. Release the pedal slowly.

2.4.2 Implement lifter, hydraulic (4:M) (4WD)

The hydraulic implement lifter only works when the engine is running, and is controlled with the switch (4:M).

The switch has the following three positions:

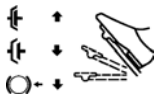
- **Floating position**. Press the front part of the switch. The switch locks in the pressed position and the implement is lowered until it reaches its floating position.
  Floating position means that the implement always rests with the same pressure against the ground and can follow the ground's contours. Floating position should be used when working.
- **Lifting**. Press the rear part of the switch until the implement is in its highest position (transport position). Then release the switch and the height is locked in transport position.
- **Locking in transport position**. The switch has reverted to neutral position after lifting. The implement is locked in transport position.

NOTE! The hydraulic implement lifter must be in floating position in order for the power take-off to be engaged.

NOTE! The power take-off cannot be engaged when the parking brake is activated.

2.4.3 Clutch-parking brake (3:B)

Never press the pedal while driving. There is a risk of overheating in the power transmission.



The pedal (3:B) has the following three positions:

- **Released**. The clutch is not activated. The parking brake is not activated.
- **Depressed halfway**. Forward drive disengaged. The parking brake is not activated.
- **Pressed down**. Forward drive disengaged. The parking brake is fully activated but not locked.

2.4.4 Inhibitor, parking brake (3:A)

The inhibitor locks the "clutch-brake" pedal in the depressed position. This function is used to lock the machine on slopes, during transport, etc., when the engine is not running.

The parking brake must always be released during operation.

Locking:

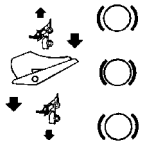
1. Depress the pedal (3:B) fully.
2. Move the inhibitor (3:A) to the right.
3. Release the pedal (3:B).
4. Release the inhibitor (3:A).

Unlocking:

Press and release the pedal (3:B).

2.4.5 Driving-service brake (3:F)

The pedal (3:F) determines the gearing ratio between the engine and the drive wheels (= the speed). When the pedal is released, the service brake is activated.



1. Press the pedal forward – the machine moves forward.
2. No load on the pedal – the machine is stationary.
3. Press the pedal backward – the machine reverses.
4. Reduce the pressure on the pedal – the machine brakes.

2.4.6 Steering wheel (3:D)

The height of the steering wheel is infinitely adjustable. Undo the adjustment knob (3:E) on the steering column and raise or lower the steering wheel to the desired position. Tighten.

Do not adjust the steering wheel during operation.

Never turn the steering wheel when the machine is stationary with a lowered implement. There is a risk of abnormal loads on the servo and steering mechanisms.

2.4.7 Throttle control (4,5:G)

Control for setting the engine's revs.

1. Full throttle – when the machine is in operation, full throttle should always be used.

2. Idling.

2.4.8 Headlight (4,5:H)

Pull-type control for turning the headlights on and off.

2.4.9 Ignition lock (4,5:I)

Ignition lock used for starting/stopping the engine. There are 3 positions:

1. Stop position – the engine is short-circuited. The key can be removed.

2. Operating position

3. Start position – the electric start motor is activated when the key is turned to the spring-loaded start position. Once the engine has started, let the key return to operating position 2.

NOTE! If the engine should stop for any reason, the key cannot be turned directly to position 3 due to a mechanical ignition lock. To start the engine - turn the key back to position 1 and then to positions 2 and 3.

2.4.10 Power take-off (4,5:K)

A lever for engaging and disengaging the power take-off for operating front-mounted accessories. Two positions:

1. Lever in forward position – power take-off disengaged.

2. Lever in backward position - power take-off engaged.

2.4.11 Hour meter (2:P)

Indicates the number of working hours. Only works when the engine is running.

2.4.12 Cruise control (4:N) (4WD)

A switch for activating the cruise control. The cruise control locks the pedal (3:F) in the desired position.

1. Press down the pedal (3:F) until the desired speed is obtained. Then press the front part of the switch to activate the cruise control. The symbol will light up.

2. Disengage the cruise control by releasing it with the pedal (3:B) or pressing the rear part of the switch.

2.4.13 Cutting height adjustment (4,5:J)

The machine is equipped with a control for using the cutting deck with electrical cutting height adjustment.

The switch is used to adjust the cutting height in continuously variable positions.

The cutting deck is connected to the contact (2:Q).

2.4.14 Rear Rake (4:L) (4WD)

The machine is fitted with a control for electrical adjustment of a rear rake (available as an accessory).

The switch is used to raise and lower the rear rake.

Cables for connecting the rear rake are found at the rear of the machine, to the left of the upper side of the bumper. (4WD is prepared for a rear rake, cables routed).

2.4.15 Sand spreader (4:O) (4WD)

The machine has been designed for electrical adjustment of a sand spreader (accessory).

12V The switch is used to start and stop the spreader.

Cables for connecting the sand spreader are at the rear of the machine.

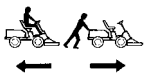
2.4.16 Clutch release lever

A lever for disengaging the variable transmission.

2WD is equipped with a lever, connected to the rear axle. See (6:R).

4WD is equipped with two levers, connected to the rear axle (7:A) and the front axle (7:B).

The levers enable the machine to be moved by hand without the help of the engine. Two positions:



1. Lever in the inner position – transmission engaged for normal operation.

2. Lever in the outer position – transmission disengaged. The machine can be moved by hand.

The machine may not be towed over long distances or at high speeds. The transmission could be damaged.

The machine must not be operated with the forward most lever in the outer position. Risk of damage and oil leakage in the front axle.

2.4.17 Seat (1:T)

The seat can be folded and adjusted front-rear. The seat can be adjusted as follows:

1. Move the control lever (1:T) upwards.

2. Set the seat to the desired position.

3. Release the control lever (1:S) to lock the seat.

The seat is equipped with a safety switch that is connected to the machine's safety system. This means that certain dangerous activities are not possible when there is nobody sitting on the seat. Also see 4.5.2.

2.4.18 Engine casing (8:U)

In order to access the fuel cock, battery and engine, the machine has an engine casing that can be opened. The engine casing is locked with a rubber strap.

The engine casing is opened as follows:

1. Undo the rubber strap (8:V) at the front edge of the casing.
2. Carefully lift the engine casing back.

Close in the reverse order.

The machine may not be operated unless the engine casing is closed and locked. Risk of burns and crushing injuries.

3 AREAS OF USE

The machine may only be used for the following tasks using the genuine STIGA accessories stated.

Work	Accessories, STIGA genuine
Mowing	Using mowing decks: 121 M, 121 M El, 125 Combi Pro, 125 Combi Pro El and with flail mower.
Sweeping	Using brush unit or collector brush unit. The use of a dust guard is recommended with the first option.
Snow clearance	Using snow blade or snow thrower Snow chains are recommended.
Grass clipping and leaf collection	Using towed collector 30" or 42".
Grass and leaf transport	Using dump cart Standard, Maxi or Combi.
Sand spreading	Using sand spreader. Can also be used for spreading salt. Snow chains are recommended.
Weeding on gravel paths	Using front-mounted hoe.
Lawn edge trimming	Using edge trimmer.
Moss scarification	Using moss scarifier.

The maximum vertical load on the towing hitch must not exceed 100 N.

The maximum over-run load on the towing hitch from towed accessories must not exceed 500 N.

NOTE! Before using a trailer – contact your insurance company.

NOTE! This machine is not intended to be driven on public roads.

4 STARTING AND OPERATION

The machine may not be operated unless the engine casing is closed and locked. Risk of burns and crushing injuries.

4.1 Refuelling

Only use diesel which satisfies the minimum requirements of the following specifications:

EN 590
BS 2869 A1 / A2
ASTM D 975 - 1D / 2D

The engine must not be run on rape diesel (RME). Contact the engine supplier for additional information.

1. Open the engine casing.
2. Open the fuel cap (9:X).

Filling fuel above the "Max" level in fig. 9 results in fuel leakage and risk of fire.

3. Fill with diesel to the "Max" level in fig. 9. If filled above this level the fuel will leak out because it expands when heated.
4. Close the fuel cap.

Use winter fuel or add kerosene in ambient temperatures below 0°C. See the table below:

Lowest ambient temperature at start °C	Proportion of kerosene	
	Summer fuel	Winter fuel
0 to -10	20%	-
-10 to -15	30%	-
-15 to -20	50%	20%
-20 to -30	-	50%

Diesel is highly flammable. Always store fuel in containers that are made especially for this purpose.

Only fill or top up with fuel outdoors, and never smoke when filling or topping up. Fill with fuel before starting the engine.
Never remove the fuel cap or fill with fuel while the engine is running or still warm.

4.2 Bleeding

The engine's fuel system must be bled in the following instances:

- If the fuel tank has been run dry and air has been drawn into the fuel system.
- After replacing the filter.

Bleed as follows:

1. Fill the tank with fuel.
2. Pump using the hand pump (10:Y) until all air has been pumped out.

4.3 Level check, engine oil

On delivery, the crankcase is filled with SAE 10W-40 oil.

Always check the oil level before use to ensure it is correct. The machine should be standing on level ground.

Check the oil level as follows:

1. Wipe around the dipstick.
2. Unscrew and pull the dipstick up.
3. Wipe the dipstick.
4. Slide the dipstick down completely and pull up again.
5. Read off the oil level. The oil level should be at the "Max" mark as illustrated in fig. 11.

If the oil level is below the "Max" mark in fig. 11, fill with oil as follows:

1. Unscrew the oil filler cap (11:C).
2. Fill with the necessary amount of oil. Applicable oil types, see "5.4".
3. Check the level as above.
4. When the level is correct, reinstall the oil filler cap and tighten.

The oil level must never exceed the "Max" mark as illustrated in fig. 11. This can cause the engine to overheat. Drain the oil to the correct level if the oil level exceeds the "Max" mark.

4.4 Level check, transmission oil

See 5.8.1.

4.5 Safety checks

Check that the results of the safety checks below are achieved when testing the machine in question.

The safety checks must always be carried out every time before use.

If any of the results below is not achieved, the machine must not be used! Take the machine to a service workshop for repair.

4.5.1 General safety check

Object	Result
Fuel lines and connections.	No leaks.
Electrical cables.	All insulation intact. No mechanical damage.
Exhaust system.	No leaks at connections. All screws tightened.
Oil lines	No leaks. No damage.
Drive the machine forwards/backwards and release the driving-service brake pedal.	The machine will stop.
Test driving	No abnormal vibrations. No abnormal sound.

4.5.2 Electrical safety check

The operation of the safety system should always be checked every time before use.

Status	Action	Result
The clutch-brake pedal is not depressed. The power take-off is not activated.	Try to start.	The engine will not start.
The clutch-brake pedal is depressed. The power take-off is activated.	The driver gets up from the seat.	The engine will not start.
Engine running. The power take-off is activated.	The driver gets up from the seat.	The power take-off will be disengaged.
Status	**Action**	**Result**
Cruise control activated.(4WD)	The driver gets up from the seat.	The cruise control will be disengaged.
Cruise control activated. (4WD)	The clutch-brake pedal is depressed.	The cruise control will be disengaged.

4.6 Start

1. Do not keep your foot on the drive pedal.
2. Put the throttle control at full throttle.
3. Depress the brake pedal fully.
4. Turn the ignition key and start the engine. The engine does not need to be preheated.

5. When starting from cold, do not make the machine work under load immediately, but let the engine run for a few minutes first. This will allow the oil to warm up.

When in use, always operate the engine at full throttle.

4.7 Power assisted steering (4WD)

Power assisted steering means that power from the machine's hydraulic system is supplied to the steering wheel movements. This makes the machine very easy to steer when the engine is operating at working revs (full throttle).

The servo effect is reduced as the engine speed drops.

4.8 Operating tips

Always check that there is the correct volume of oil in the engine. This is particularly important when operating on slopes. See 4.3.

Be careful when driving on slopes. No sudden starting or stopping when driving up or down a slope. Never drive across a slope. Move from the top down or from the bottom to the top.

The machine may not be driven on slopes greater than 10° in any direction.

Reduce the speed on slopes and when making sharp turns in order to retain control and reduce the risk of tipping over.

Do not turn the steering wheel to full lock when driving in top gear and at full throttle. The machine can easily topple over.

Keep hands and fingers well away from articulated steering joint and seat bracket. Risk of crushing injuries. Never drive with the engine casing open.

4.9 Stop

Disengage the power take-off. Apply the parking brake.

If the machine is left unattended, remove the ignition key.

The engine may be very warm immediately after it is shut off. Do not touch the cylinder or cooling fins. This can cause burn injuries.

4.10 Cleaning

To reduce the risk of fire, keep the engine, silencer, battery and fuel tank free from grass, leaves and oil.

To reduce the risk of fire, regularly check the machine for oil and/or fuel leakage.

Clean the machine after each use. The following instructions apply for cleaning:

- When washing the machine with water under high pressure, do not point the jet directly at axle seals, electrical components or hydraulic valves.
- Do not spray water directly at the engine.
- Clean the engine with a brush and/or compressed air.
- Clean the engine's cooling air intake (10:W).

5 MAINTENANCE

5.1 Service programme

In order to keep the machine in good condition as regards reliability and operational safety as well as from an environmental perspective, STIGA's Service programme should be followed.

The contents of this programme can be found in the attached service log.

Basic service must always be carried out by an authorised workshop.

First service and intermediate service should be carried out by an authorised workshop, but can also be carried out by the user. The content of this can be found in the service log and the actions are described under "4 STARTING AND OPERATION" as well as below.

Servicing carried out at an authorised workshop guarantees professional work using genuine spare parts.

At each basic service and intermediate service carried out at an authorised workshop, the service log is stamped. A service log presenting these services is a valuable document that improves the machine's second-hand value.

5.2 Preparation

All service and all maintenance must be carried out on a stationary machine with the engine switched off.

Prevent the machine from rolling by always applying the parking brake.

Stop the engine.

Prevent unintentional starting of the motor by always stopping the motor and disconnecting the negative cable from the battery.

5.3 Tyre pressure

Adjust the air pressure in the tyres as follows:
Front: 0.6 bar (9 psi).
Rear: 0.4 bar (6 psi).

5.4 Changing engine oil

The engine oil must be changed for the first time after 25 hours of operation and then every 250 hours of operation.

Use the following oil specifications:

ACEA-B2-E2 or API-CF-CG or SHPD.

Select the oil grade according to the table below.

Ambient temperature	Oil grade
-24°C - +45°C.	10W/40
-30°C - +45°C.	5W/40

Use oil without any additives.

Do not overfill with oil. This can cause the engine to overheat.

Change oil when the engine is warm.

The engine oil may be very hot if it is drained off directly after the engine is shut off. So allow the engine to cool a few minutes before draining the oil.

1. Push the drain hose down so that it comes out under the engine. See fig. 12
2. Tighten the clamp on the oil drain hose. Use a polygrip or similar.
3. Move the clamp 3-4 cm up the oil drain hose and pull out the plug.
4. Collect the oil in a container.
   NOTE! Do not spill any oil on the drive belts.
5. Dispose of the oil according to local regulations.
6. Install the oil drain plug and slide the clamp back so that it clamps over the plug.
7. To clean the oil filter, see 5.4.1 below before continuing.
8. Remove the filler cap (11:C) and fill with oil. The engine has a capacity of around 1.7 litres.
9. After filling the oil, start the engine and run at idle speed for 30 seconds.
10. Check to see if there is any oil leakage.
11. Stop the engine. Wait for 30 seconds and then check the oil level. See 4.3. Top up the oil if necessary.

5.4.1 Oil filter

The oil filter must be cleaned after 1000 hours of operation and when changing the oil. First drain the engine oil and install the oil drain plug as above. Then clean the oil filter as follows:

1. Clean the area around the filter (13:A)
2. Slacken off the screw (13:B) 5 turns.
3. Pull out the oil filter.

Never direct the flow of compressed air towards the body. The penetration of air into the blood stream can be fatal.

4. Clean the filter by blowing compressed air in and out of the filter. See fig. 14.
5. Check/replace the gasket (14:D).
6. Lubricate the gasket (14:D) and slide the filter in to its limit position.
7. Check that the ends of the tensioner spring (13:C) lie flush against the filter. Tighten the screws (13:B).
8. Continue with point 7 according to “5.4 Changing engine oil” above.

5.5 Engine screws

All screwed joints on the engine must be check-tightened after 25 hours of operation and then every 250 hours of operation.

Exceptions:

- The cylinder head screws must not be touched.
- The fuel injection system’s adjustment screws, as illustrated in fig. 15, must not be touched.

5.6 Fuel filter

The fuel filter (10:E) must be replaced after every 500 hours of operation.

After replacing, the fuel system must be bled. See “4.2”.

Check that there is no fuel leakage once the new filter has been installed.

5.7 Cleaning the fuel tank

During temperature changes water from the air will condense in the fuel tank. The amount of water that condenses increases during large temperature changes and at high humidity. The water drops and settles at the bottom of the fuel tank.

Condensation should be drained from the fuel tank as necessary and at least once a year.

The engine must be cold when the condensation id drained, otherwise there is a risk of fire.

Smoking, fires, sparks and other heat sources are prohibited in the proximity when the condensation is drained. There is a fire risk.

Drain the condensation as follows:

1. Detach the drain hose from the its mounting under the rear bumper. See fig. 16.
2. Turn the drain cock (16:F) in its mounting to facilitate opening.
3. Insert the drain hose into a suitable container.
4. Open the drain cock and drain until all the water has run out.
5. Close the drain cock and reset the cock and hose in reverse order.

6. Dispose of the drained fluid according to local regulations.

5.8 Transmission, oil - filter (4WD)

The oil and filter in the hydraulic power transmission must be checked/adjusted and changed at the intervals given in the table below.

Action	1st time	Then at intervals of
	Hours of operation	
Checking – adjusting level.	-	50
Changing the oil Cleaning the filter.	5	200

The type of oil is dependent on the hours of operation according to the table below:

Hours of operation	Oil type
More than 100 hours of operation/year	Synthetic oil 5W-50
Less than 100 hours of operation/year	SAE30

Oil quantity when changing: approximately 3.5 litres.

5.8.1 Check – adjustment

1. Place the machine on a flat surface.
2. Read off the oil level in the reservoir. See fig. 20. The level should be level with the line.
3. If necessary, top up with more oil.

5.8.2 Draining

1. Run the machine at variable speeds for 10-20 minutes to heat up the transmission oil.
2. Position the machine completely horizontally.
3. Pull out both disengagement levers according to fig. 6.
4. Place one container under the rear axle and one under the front axle.
5. Open the oil reservoir by removing the cover. See 9:R.

Only a 3/8" square drive may be used for the filter plug. Other tools will damage the plug.

6. Remove the filter plug from the rear axle. Clean the hole and use a 3/8" square drive. Remove the filter and allow the oil in the rear axle and reservoir to run out. See figure 11.
7. Remove 2 drain plugs from the front axle. Use a 12 mm socket. Allow the oil in the front axle and pipes to run out. See fig. 12.
8. Clean the filter (11:X) using a suitable solvent and compressed air.
9. Check that the gaskets on the drain plugs of the front axle are intact. See fig. 12. Reinstall the plugs. Tightening torque: 15-17 Nm.

The filter plug will be damaged if it is tightened more to than 5 Nm.

10. Check that the gasket on the filter plug of the rear axle is intact. See fig. 11:Y. Reinstall the filter and filter plug in the rear axle. Tighten the filter plug to 5 Nm.
11. Draw out the oil from the deeper section of the reservoir using an oil extractor. See fig. 13.
12. Dispose of the oil according to local regulations.

5.8.3 Filling

The engine must never be run when the rear clutch release lever is pushed in and the front clutch release lever is pulled out.

This will damage the front axle seals.

1. Fill the oil reservoir with the new oil.

If the engine is run indoors, exhaust extraction equipment must be connected to the engine's exhaust pipe.

2. Check that the rear axle's clutch release lever is pulled out.
3. Start the engine. When the engine is started, the front axle's clutch release lever slides inwards automatically.
4. Pull out the front axle's clutch release lever.

   NOTE! The oil is drawn into the system very quickly. The reservoir must always be topped up. Air must never be drawn in.
5. Set the accelerator pedal to the forward position by blocking it using a wooden wedge. See fig. 14. Fill the oil reservoir by hand using new oil.
6. Run in the forward position for one minute.
7. Move the wooden wedge and set the accelerator pedal to the reverse position. Continue filling with oil.
8. Run in reverse mode for one minute.
9. Change driving direction once every minute as above and continue filling with oil until the bubbling in the reservoir stops.
10. Switch off the engine, install the oil reservoir cover and close the engine cover.
11. Test drive for several minutes and adjust the oil level in the reservoir.

5.9 Belt transmissions

After 5 hours of operation, check that all the belts are intact and undamaged.

5.10 Steering

The steering must be checked/adjusted after 5 hours of operation and thereafter after 100 hours of operation.

5.10.1 Checks

Briefly turn the steering wheel back and forth. There must be no mechanical clearance in the steering chains.

5.10.2 Adjustment

Adjust the steering chains if required as follows:

1. Put the machine in the straight-ahead position.
2. Adjust the steering chains with the two nuts, located under the central point. See fig. 22.
3. Adjust both nuts by the same amount until there is no clearance.
4. Test drive the machine straight forwards and check that the steering wheel is not off centre.
5. If the steering wheel is off centre, undo one nut and tighten the other.

Do not over-tighten the steering chains. This will cause the steering to become heavy and will increase wear on the steering chains.

5.11 Battery

If acid comes into contact with the eyes or skin, this can cause serious injuries. If any part of the body has come into contact with acid, rinse immediately with copious amounts of water and seek medical assistance as soon as possible.

The battery is a valve-regulated battery with 12 V nominal voltage. The battery fluid does not need to and cannot be checked or topped up. The only maintenance that is required is charging, for example after extended storage.

The battery must be fully charged before being used for the first time. The battery must always be stored fully charged. If the battery is stored while discharged, serious damage will occur.

5.11.1 Charging with the engine

The battery can be charged using the engine's generator as follows:

1. Install the battery in the machine as shown below.
2. Place the machine outdoors or install an extraction device for the exhaust fumes.
3. Start the engine according to the instructions in the user guide.
4. Allow the engine to run continuously for 45 minutes.
5. Stop the engine. The battery will now be fully charged.

5.11.2 Charging using battery charger

When charging using a battery charger, a battery charger with constant voltage must be used.

Contact your dealer to purchase a battery charger with constant voltage.

The battery can be damaged if a standard type battery charger is used.

5.11.3 Removal/Installation

5.11.4 Removal/Installation

The battery is placed under the engine casing. During removal/installation, the following applies regarding connection of the cables:

- During removal. First disconnect the black cable from the battery's negative terminal (-). Then disconnect the red cable from the battery's positive terminal (-).
- During installation. First connect the red cable to the battery's positive terminal (+). Then connect the black cable to the battery's negative terminal (-).

If the cables are disconnected/connected in the wrong order, there is a risk of a short-circuit and damage to the battery.

If the cables are interchanged, the generator and the battery will be damaged.

The engine must never be driven with the battery disconnected. There is a risk of serious damage to the generator and the electrical system.

5.11.5 Cleaning

If the battery terminals are coated with oxide, they should be cleaned. Clean the battery terminals with a wire brush and lubricate them with terminal grease.

5.12 Air filter, engine

A damaged air filter allows contaminated air into the engine. This will cause serious damage to the engine.

The air filter must be cleaned after every 50 hours of operation. The oil filter must be replaced as necessary, or after every 500 hours of operation.

NOTE! Clean/replace the filter more often if the machine operates in dusty conditions.

Remove/install the air filters as follows.

1. Disconnect the rear mounting for the right-hand splash guard (23:G). Fold the splash guard to one side.
2. Clean carefully around the air filter housing.
3. Disconnect the air filter housing by slackening off the wing nut (23:H).
4. Remove the filter (24:I) by slackening off the ridged nut (24:J).

Never direct the flow of compressed air towards the body. The penetration of air into the blood stream can be fatal.

5. Clean off any dry dirt on the filter by blowing compressed air in and out of the filter. The pressure must not exceed 5 bar.
   Check for cracks or other damage after cleaning. This can be visually checked against a light source.
   Check that the filter's mating surfaces are free of faults.
   If the filter is damaged, it must be replaced.
   If the filter is contaminated by moisture/oily dirt, it must be replaced.
6. Assemble in reverse order.

Do not use compressed air or petroleum based solvents such as kerosene to clean the paper filter insert. This will damage the filter.

5.13 Air intake

See 10:W. The engine is air-cooled. A blocked cooling system can damage the engine. Clean the engine's air intake after 50 hours of operation. More meticulous cleaning of the cooling system is carried out during each basic service.

5.14 Lubrication

All lubrication points in accordance with the table below must be lubricated every 50 hours of operation as well as after every wash.

Object	Action	Figure
Wheel bearing	2 grease nipples. Use a grease gun filled with universal grease. Pump until the grease emerges.	25
Centre point	4 grease nipples. Use a grease gun filled with universal grease. Pump until the grease emerges.	26
Steering chains	Brush the chains clean with a wire brush. Lubricate with universal chain spray.	-
Tensioning arms	Lubricate the bearing points with an oil can when each control is activated. Ideally carried out by two people.	27
Control cables	Lubricate the cable ends with an oil can when each control is activated. Must be carried out by two people.	28

5.15 Fuses

If any of the faults listed below occurs, replace the relevant fuse. See fig. 29/30.

Fault	Fuse
The engine does not start or starts and stops immediately. The battery is charged.	10 A
Sand spreader and electrical cutting height adjustment do not work.	20 A
All electrical functions are out of operation. The battery is charged.	30 A

6 PATENT - DESIGN REGISTRATION

This machine or parts thereof is covered by the following patent and design registration:
SE9901091-0, SE9901730-3, SE9401745-6, US595 7497, FR772384, DE69520215.4, GB772384, SE0301072-5, SE04/000239 (PCT), SE0401554-1, SE0501599-5.

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